



Submarine Base, Groton, Conn.

MEMORANDUM REPORT NO. 68-11

LIMITATIONS ON THE USE OF CIRCUMAURAL EARPHONES

by

Benson, R. W., Charan, K. K., Day, J. W., Harris, J. D.
Niemoeller, A. F., Rudmose, W., Shaw, E. A. G., and Weissler, P.

Bureau of Medicine and Surgery, Navy Department
Research Work Unit MF022.01.04-9003.I

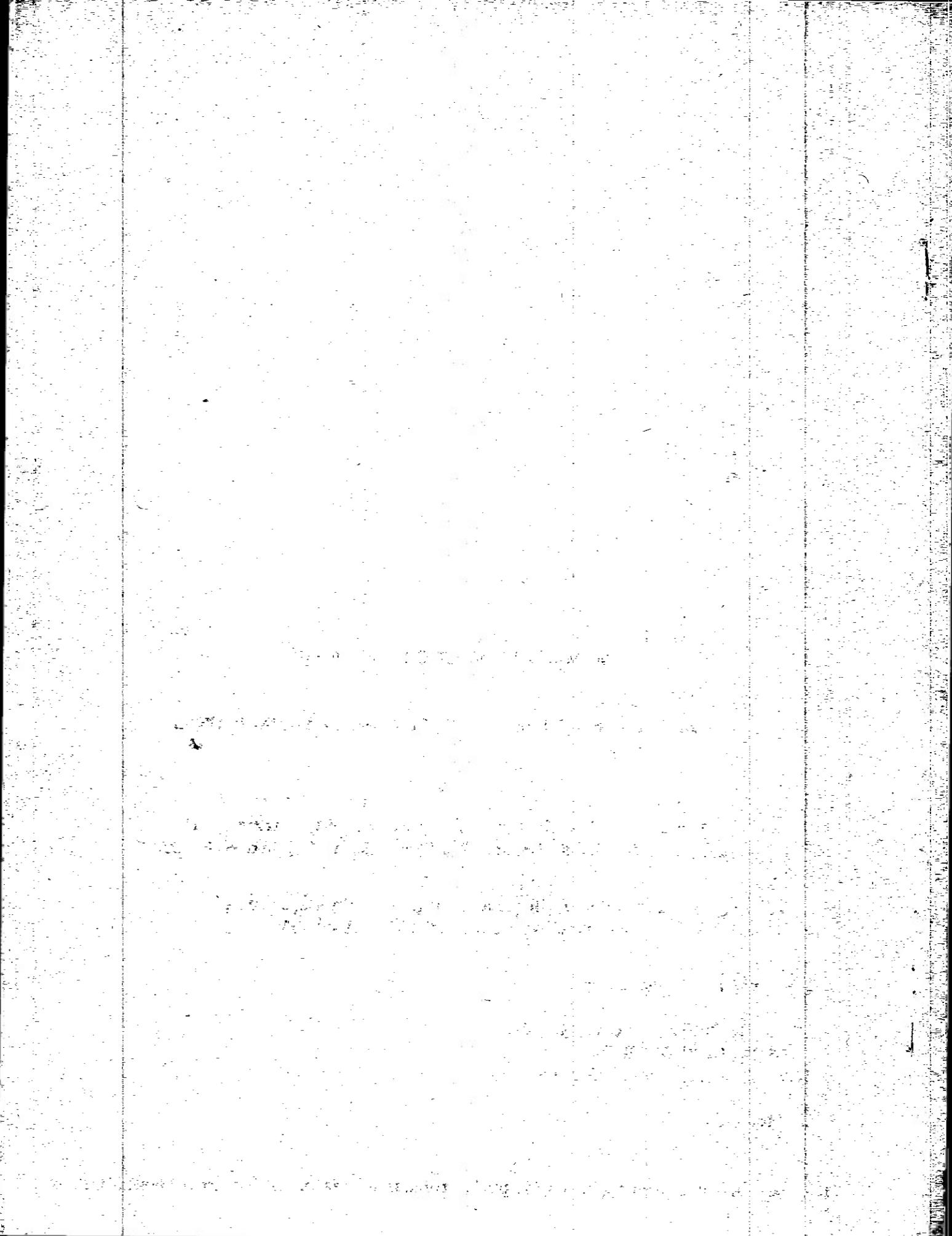
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29 May 1968



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MF 022.01.04-9003.1

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SUMMARY PAGE

basis for this calibration. For this reason, the committee urges research on circumaural earphones, particularly on their construction, use, and calibration.

To summarize, it is the author's opinion that there are not sufficient data available at the present time to enable one to use circumaural earphones whenever sound-pressure levels of pure tones at the eardrum must be accurately defined, without thoroughly investigating *first* the calibration of the system consisting of the particular earphones and ears (both real and artificial) under consideration and *second* the reliability of this calibration. At this time the routine use of circumaural earphones in clinical and industrial audiometry cannot be justified, but should be restricted to laboratory practices where investigation of calibration procedures in relation to the specific earphones can be carried out.

CHARAN, K. K., COX, J. R., AND NIEMOELLER, A. F. (1965). "An Evaluation of New Couplers for Circumaural Earphones," *J. Acoust. Soc. Am.* *38*, 945-955.
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UNCLASSIFIED

Security Classification

DOCUMENT CONTROL DATA - R & D

(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)

1. ORIGINATING ACTIVITY (Corporate author) U.S. NAVAL SUBMARINE MEDICAL CENTER, Submarine Medical Research Laboratory	2a. REPORT SECURITY CLASSIFICATION UNCLASSIFIED
	2b. GROUP

3. REPORT TITLE

LIMITATIONS ON THE USE OF CIRCUMAURAL EARPHONES

4. DESCRIPTIVE NOTES (Type of report and inclusive dates)

Interim Report

5. AUTHOR(S) (First name, middle initial, last name)

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6. REPORT DATE

29 May 1968

7a. TOTAL NO. OF PAGES

2

7b. NO. OF REFS

Five

8a. CONTRACT OR GRANT NO.

b. PROJECT NO.

MF 022.01.04-9003.1

9a. ORIGINATOR'S REPORT NUMBER(S)

Memorandum Report No. 68-11

c.
d.

9b. OTHER REPORT NO(S) (Any other numbers that may be assigned this report)

10. DISTRIBUTION STATEMENT

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11. SUPPLEMENTARY NOTES

12. SPONSORING MILITARY ACTIVITY

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13. ABSTRACT

A literature survey and interpretation by a panel of experts of the NAS-NRC Committee on Hearing, Bioacoustics and Biomechanics shows that the now commonly-used large earmuffs, designed to protect hearing, cannot indiscriminately replace the small earphone cushion currently the standard for audiometry. If they are so used, hearing losses at 3000-8000 cycles/second should be rechecked with the standard cushion.

DD FORM 1 NOV 65 1473 (PAGE 1)

S/N 0101-807-6801

UNCLASSIFIED

Security Classification

3ND PPSO 13152

UNCLASSIFIED

Security Classification

14. KEY WORDS	LINK A		LINK B		LINK C	
	ROLE	WT	ROLE	WT	ROLE	WT
Protective equipment (for hearing in noise)						
Audiometer Equipment						
Earphone Calibration						
Circumaural Earphone Cushion						

DD FORM 1 NOV 65 1473 (BACK)
(PAGE 2)

UNCLASSIFIED
Security Classification